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RESEARCH ARTICLE

Impact of Deductibles on Initiation and Continuation of Psychotherapy for Treatment of Depression

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Objective. To estimate the impact of deductibles on the initiation and continuation of psychotherapy for depression.

Data Sources/Study Setting. Data from health care encounters and claims from Group Health Cooperative, a large integrated health care system in Washington State, was merged with information from a centralized behavioral health triage call center to conduct study analyses.

Study Design. A retrospective observational design using a hierarchical logistic regression model was used to estimate initiation and continuation probabilities for use of psychotherapy, adjusting for key sociodemographic/economic factors and prior use of behavioral health services relevant to individual decisions to seek mental health care.

Data Collection/Extraction Methods. Analyses were based on merged datasets on patient enrollment, insurance benefits, use of mental health and general medical services and information collected by a triage specialist at a centralized behavioral health call center.

Principal Findings. Among individuals with unmet deductibles between $100 and $500, we found a statistically significant lower likelihood of making an initial visit, but there was no statistically significant effect on making an initial or subsequent visit among individuals that had met their deductible.

Conclusions. Unmet deductibles appear to influence the likelihood of initiating psychotherapy for treating depression.

Key Words. Deductibles, psychotherapy, depression

Recent trends in health insurance in general and coverage for mental health care in particular require a re-examination of the impact that patient out-of-pocket costs have on the use of mental health services. An extensive literature

has examined patient sensitivity to co-payments and co-insurance on the demand for care. The earliest and most comprehensive research was conducted as part of the RAND Health Insurance Experiment (HIE), which examined the probability of mental health care use and changes in use over time in relation to insurance generosity. In several publications (Wells et al. 1984, 1986a, 1986b, 1987; Wells, Keeler, and Manning 1990), HIE investigators reported that the probability of use among individuals without any cost sharing in their insurance plan was more than 50 percent greater than individuals with any cost share but only 14 percent of the entire population sought care from a mental health specialist. Prior use was a much more significant predictor (Fishman and Hornbrook 2009) of the likelihood of current or future use than cost sharing, regardless of the specific type of cost sharing or if the patient experienced any out-of-pocket costs at all.

More recently Simon and colleagues (Simon, VonKorff, and Durham 1994; Simon et al. 1996) used administrative data to examine effects of changing co-payment levels on use of outpatient mental health services and found that in cross-sectional analyses, visit co-payments of $20 and $30 (compared to no co-payment) were associated with 30 and 50 percent reductions in service use, respectively. In longitudinal analyses, an increase in visit co-payments from $0 to $20 was associated with a 16 percent reduction in likelihood of entering treatment and a further increase from $20 to $30 was associated with a 9 percent reduction in number of visits among those using services. Effects of co-payment increases were the same in those with mild or more severe illness.

The extant literature on the impact that cost sharing has on the demand for mental health care has focused on co-payments and co-insurance, and industry trends make clear that these cost sharing elements are still important for understanding consumer demand for mental health. The percent of employer sponsored plans with any co-payments for mental health services increased from 67 to 83 percent and the percent with co-payments $\geq$ $20 increased from 5.8 to 30.8 percent from 1999 to 2003 (Horgan et al. 2009). However, the more significant trend in insurance coverage is the increased

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use of deductibles within U.S. commercial insurance products. The Kaiser Family foundation reports that the percent of workers in plans with high deductibles increased from 6 to 17 percent in all plans from 2006 to 2010 and 16–46 percent among firms with fewer than 200 workers (Claxton, DiJulio, and Whitmore 2010). High-deductible health plans are promoted as a means of lowering the rate of growth of health care cost by shifting more financial responsibility to patients, but there are concerns that they can reduce access to appropriate and timely care among all patients and in particular those with lower incomes by increasing financial barriers to care.

The other significant development with respect to insurance coverage of mental health care is federal and state mandates for insurance parity of mental health benefits with general medical and surgical services covered through group health insurance plans (Barry, Frank, and McGuire 2006). The most prominent legislation at the federal level is the Mental Health Parity Act (MHPA) of 1996, and updated by subsequent legislation in 2008, which requires group health plans to cover treatment for mental illness on the same terms and conditions as medical and surgical care. Washington State has even greater protections for patients with insurance access to mental health coverage provided through the Mental Health Parity Act, enacted in 2005. This legislation requires that group plans offered in Washington provide mental health benefits "in a manner comparable in scope and limitations to other health services" (Health Parity Act 2005). These existing provisions are enhanced by the Affordable Health Care for America Act (ACA 2010), which when its key provisions take effect in 2014, eliminates an insurer's ability to deny coverage or raise premiums on the basis of previously diagnosed chemical dependency or substance abuse needs or mental illness. Chemical dependency and mental health services will also be required benefits in insurance products offered through the health insurance exchanges established by the ACA.

Health insurance reform reflected both by the ACA and the earlier adoption of mental health parity with general medical and surgical benefits has been a long time goal of providers and advocates of mental health services. However, the unintended consequence of parity is that mental health care now involves identical cost sharing with general medical and surgical services, which in practice has meant an increase in cost sharing levels for mental health care. When insurers did provide coverage for mental health services, benefits often did not require cost sharing or they were waived.

The combination of parity, greater co-payment levels, and the increasing trend toward deductibles highlight the need for a reexamination of the manner in which cost sharing affects the use of mental health services.

Following an extensive review of the published literature, we are not aware of research that has examined the impact of deductible plans with and without other forms of cost sharing on the initiation and continuation of mental health care. To bridge this gap, we examine the impact of cost sharing in unmet deductible and the specific effects of co-payments and deductibles on initiation and continuation of psychotherapy for treatment of depression. Specifically, we examine whether co-payments and deductibles affect the likelihood that individuals will make an initial or subsequent visit for psychotherapy for depression care, controlling for other factors likely to influence these decisions. We chose psychotherapy use for this analysis because of clinical evidence and published guidelines that endorse psychotherapy as a first-line treatment for depression (U.S. Department of Health and Human Services AfHPaR and Research AfHPa 1993; American Psychiatric Association 2000; Parikh, Segal, and Grigoriadis 2009) and the evidence that the majority of people with depression prefer psychotherapy for initial treatment (Chilvers, Dewey, and Fielding 2001; Dwight-Johnson et al. 2001). A focus on psychotherapy for depression provides for an analysis of an effective and preferred treatment that is likely to isolate the effect of cost sharing on service use.

SETTING

This research was conducted at Group Health Cooperative (GH), an integrated health care and health insurance system that provides comprehensive health and preventive care on a prepaid basis to approximately 600,000 individuals. Founded in 1947, the nonprofit GH is the nation's oldest and largest consumer governed health care system and serves 20 of Washington States' 39 counties and two counties in Northern Idaho. GH offers insurance through each of the key programs available in the United States: commercial insurance through employer sponsored plans, individual and family plans, the nation's oldest prepaid Medicare program, Medicaid as well as the Basic Health Plan, a Washington State "gap" plan available to individuals not eligible for Medicaid but without other sources of health insurance. The GH population closely resembles the underlying community with respect to age, race, and gender.

In the Puget Sound region of western Washington, which includes the metropolitan areas of Seattle, Bellevue, Tacoma, Everett, and Olympia, GH provides care to approximately 368,000 people through a fully integrated care delivery system that includes 20 owned-and-operated primary care clinics that have onsite pharmacies, laboratories, and radiology suites; four specialty cen-

ters; and seven urgent care departments. In metropolitan Spokane GH provides insurance and health care through an alternate integrated practice for approximately 38,000 enrollees. In this market, GH owns and operates six primary care clinics staffed by GH physicians but contracts with community providers for all specialty care and services, including mental health care. GH enrollees in other parts of the state receive all primary and specialty services from contracted providers. Although the service area for this network care model includes several medium size cities, most of the service area for the GH network is in micropolitan, or urban areas based around a core city or town with a population of 10,000–50,000, or rural settings. Network enrollees receive primary and specialty services from thousands of providers and facilities throughout the state. Although contract providers are reimbursed in a variety of ways, the dominant payment model is discounted fee for service.

GH's broad insurance programs and statewide coverage through a variety of care delivery models provides a unique opportunity to examine the implications of alternative cost sharing for mental health services. GH offers insurance plans that vary widely with respect to cost sharing for mental health services. Co-payments for outpatient psychotherapy visits are $10 or less for approximately 35 percent of members, $15 or $20 for approximately 50 percent of members, and >$20 for approximately 15 percent of members. In addition, plans vary in the annual deductible that is applied to health spending (mental health and general medical care). In 2006, 71 percent of GH members had no annual deductible (i.e., first-dollar coverage), 15 percent had annual deductibles of <$1,000 per person, and 14 percent had annual deductibles of > $1,000. During the study period, some insurance plans still included annual coverage limits on the number of psychotherapy visits, but none had limits lower than 10 visits per year.

Since 2005 GH enrollees may self-refer to specialty mental health services, and self-referrals account for approximately 80 percent of initial treatment requests, with physician referrals accounting for the remainder. Enrollees seeking mental health services call a centralized triage system during which a screening specialist assesses patient need and depending on whether the individual lives in an area served by the integrated group practice offers either an appointment with a group-model provider or a referral to a contracted network provider and contact information for three or more providers. Callers referred to network providers were given contact information for three or more contracted network providers in the caller's area and advised to call back once an initial appointment was scheduled (to allow a formal authorization for payment). Enrollees living in the group model's service area

may receive a referral for a contract provider if no appointment is available with a group model provider within 2 weeks of the call.

METHODS

We analyzed the impact of cost sharing through co-payments and deductibles on the initiation and continuation of psychotherapy among GH enrollees that called the centralized behavioral health services triage center between 1/1/2003 and 12/31/2008 with a primary problem or complaint of depression. Individuals eligible for the study were aged 13 and over at the time they called the center, enrolled for at least 1 year prior and at least 2 months following the call, and had not made a prior request for behavioral health care for depression within the prior year. We analyze the impact of cost sharing on the use of psychotherapy adjusting for factors identified as relevant to the demand for health care use in general and mental health care in particular. With respect to socioeconomic and sociodemographic factors, GH collects limited data on other than age and sex. We use geo-coded median census block values to adjust for income and education. Automated GH records identified prior use of mental health care for depression or substance abuse, any previous prescription antidepressant drug use, and current or previous diagnosis of anxiety. Access to mental health care providers as well as factors related to community norms around mental health care was measured by the type of community—metropolitan, micropolitan, or rural—in which the individual lived. The relative intensity of demand for mental health care was captured by the referral source: whether self-referred, referred by a family member, or referred by a physician, with the assumption that self-referred patients are more motivated to seek care. General medical co-morbidity was measured by Resource Utilization Bands (DxCG Inc. 2007), which capture expected health care use as predicted by prior year diagnoses. To account for potential secular trends in the use of mental health services, the model also includes an indicator for the calendar year during which the patient contacted the call center. For this analysis, we defined initiation of psychotherapy as a visit to a behavioral health specialist within 45 days of their call to the triage center and continuation of therapy as a subsequent visit within 45 days of the prior visit.

Each individual's co-payment and deductible was determined by a review of the contracts and supplemental material related to each subject's insurance policy. To determine whether individuals had met any deductible for which they were responsible at the time they called the behavioral health

call center, we examined data for all health care encounters through that point in time and summed the amount they had been billed by Group Health for their care to determine out-of-pocket costs. The total amount Group Health billed was used to establish whether individuals had met their deductible at the time of their call to the triage center.

We estimated unadjusted rates of initiation and continuation of psychotherapy and used hierarchical logistic regression models to estimate initiation and continuation probabilities after adjusting for key covariates relevant to individual decisions to seek mental health care. The adjusted model accounted for clustering of treatment episodes within patients and visits within treatment episodes. Each patient contributed at least one observation (did or did not attend the initial visit) and could contribute up to five observations per episode to this model. Those attending the initial visit contributed at least one additional observation (did or did not attend second visit), those attending the second visit contributed at least one additional observation (did or did not attend third visit), and so on. These models allowed us to estimate the relative odds of making a visit as a function of co-payment and deductible levels while accounting for possible confounding factors. The outcome in these models was a binary indicator of whether a visit was made within 45 days of the triage call (for the first visit) or prior visit. Models were adjusted for group- or network-model provider, age, sex, referral source, diagnosis of anxiety or substance abuse in the prior year, use of antidepressant medications in the prior year, median neighborhood income, median neighborhood educational attainment, and expected medical care use. A variable indicating the calendar year was included in the model to identify the potential impact of secular trends on the use of mental health care. The Group Health Human Subjects Review Committee (IRB) reviewed all study procedures and granted a waiver of consent to use de-identified records data for this research.

RESULTS

Analyses of automated health plan information systems identified a potential sample of 23,667 episodes of care among 21,930 individuals during the study period. In this sample, 20,825 episodes met the enrollment restriction described above and 17,691 of those had complete data available for all covariates/predictors. In this final sample, 15,305 individuals contributed a single episode of care, 1,056 contributed two, and 90 contributed three or more. Table 1 describes patients included in our analyses based on the two distinct

elements of cost sharing—descriptive information is reported based on the presence and level of deductibles in columns 2 and 3 and by co-payment in columns 4 and 5, with percentages reported by columns. As reported in Table 1, patients with higher deductibles, defined as >$100 within a calendar year, were more likely to receive care in the contracted network, to self-refer, and to be younger than 65. Higher co-payments were associated with receiving care in the contract network and younger age. Individuals calling the triage center were more likely to have deductibles in their insurance benefits over time with 9 percent having any deductible in 2004 and 26.8 percent in 2008.

Figure 1 reports unadjusted rates of initiation and continuation of psychotherapy as a function of deductible (Figure 1a) and co-payment level (Figure 1b). Figure 1a reports that patients with a lower deductible had a slightly greater likelihood of making an initial visit, but there were no differences by deductible level for subsequent visits. Patients with lower co-payments, reported in Figure 1b, were slightly more likely to make an initial visit, but patients with higher co-payments were slightly more likely to make continuing visits, in particular, visits 3–5.

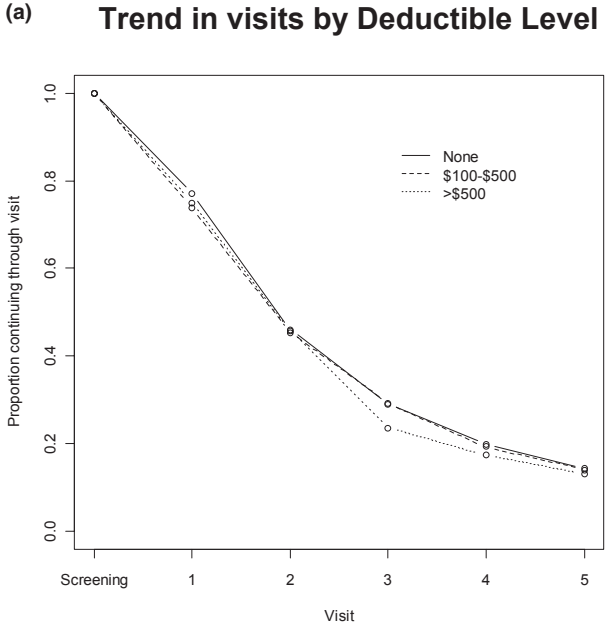
Statistical analyses based on the regression results are reported in Table 2. There was no significant effect of deductible for visits at which a deductible was already met; however, among individuals with unmet deductibles between $100 and $500, we found a statistically significant lower likelihood of making an initial visit, but there was no statistically significant effect on making an initial or subsequent visit among individuals that had met their deductible. We observe no effect of deductible coverage on likelihood of discontinuing treatment after the first visit. Co-payments, regardless of their size, had no statistically significant effect on the likelihood of an individual initiating or continuing psychotherapy (Table 2).

Model covariates provide further information about factors other than cost sharing that contribute to the initiation or continuation of psychotherapy. Individuals that received care within the contract network delivery system were significantly less likely to make an initial visit but were significantly more likely to make subsequent visits. Women and persons with neighborhood income between $25,000 and $40,000, relative to individuals with neighborhood income between $45,000 and $65,000, were less likely to make an initial visit, but neither gender nor income had an effect on the likelihood of continuation. Patients from neighborhoods with greater educational attainment were more likely to make initial and continuing visits, and all age groups were less likely to initiate or continue psychotherapy relative to patients aged 40–64. Individuals referred to psychotherapy by a family physician were less likely to

Table 1: Comparison of Baseline Characteristics of Patients by Deductible and Co-payment Level

	Deductible (%)			*Co-payment (%)*		
	None *n = 15,170*	*$100–$500* *n = 2,377*	*> $500* *n = 144*	*< $10* *n = 1,121*	*$10–$20* *n = 15,463*	*> $20* *n = 1,107*
Group	63.3	55.6	62.5	72.7	62.1	54.5
Network	36.7	44.4	37.5	27.3	37.9	45.5
Female	68.3	68.8	66.0	72.0	68.0	68.8
Age (years)						
<18	12.0	9.7	9.7	17.1	11.4	10.8
18–24	10.8	9.4	6.9	14.7	10.3	9.9
25–39	23.2	32.4	21.5	28.5	23.8	28.6
40–64	44.3	48.1	61.1	36.8	45.2	49.4
65+	9.6	0.4	0.7	2.8	9.2	1.2
Reside outside metropolitan area	9.3	13.2	20.8	6.2	10.1	11.6
Reside in lower-income neighborhood	24.2	27.6	24.3	24.4	24.7	24.4
Reside in lower-education neighborhood	13.6	13.0	17.4	16.3	13.4	13.0
Referral source						
Self	59.1	64.6	60.4	59.9	59.7	62.6
Health care provider	30.0	26.6	27.1	27.6	29.7	28.4
Family	8.9	7.7	10.4	10.6	8.7	7.8
Other	2.0	1.1	2.1	1.9	2.0	1.3
Clinician-rated urgency at triage call						
Routine	90.4	91.6	88.9	89.5	90.6	90.7
At-risk	6.7	6.3	8.3	7.3	6.6	6.4
Urgent	2.9	2.1	2.8	3.2	2.8	2.9
Recent anxiety diagnosis	12.6	12.5	13.9	11.7	12.6	12.9
Recent substance use diagnosis	12.5	12.6	9.7	15.5	12.2	12.5
Recent antidepressant use	43.0	38.5	35.4	47.6	42.2	38.5

Figure 1: Trend in Visits by (a) Deductible and (b) Co-payment Level



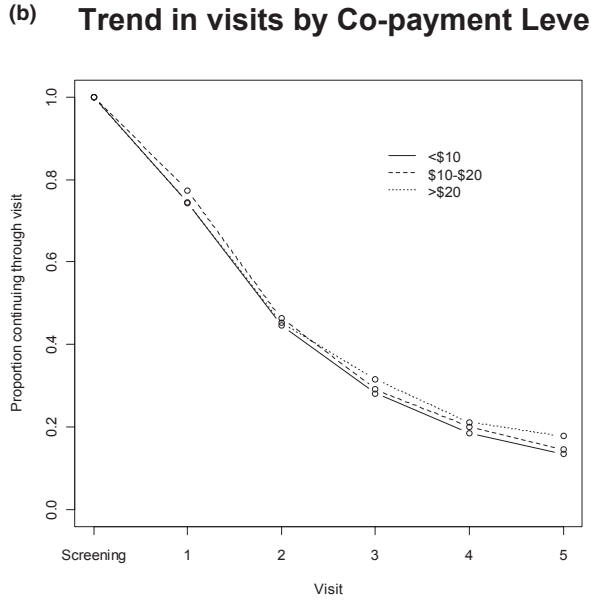


Table 2: Results for Hierarchical Logistic Regression Models for Initiation and Continuation of Psychotherapy

	Visit 1				*Visits 2–5*			
	OR	*95% CI*		*p-Value*	*OR*	*95% CI*		*p-Value*
Group/network								
Group	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Network	0.39	0.36	0.42	<.001	2.22	2.08	2.33	<.001
Age (years)								
<18	0.82	0.7	0.96	.01	0.85	0.76	0.94	.003
18–24	0.65	0.57	0.74	<.001	0.84	0.77	0.92	<.001
25–39	0.77	0.7	0.85	<.001	0.90	0.85	0.97	.003
40–64	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
64+	0.62	0.54	0.71	<.001	0.69	0.62	0.77	<.001
Gender								
Male	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Female	0.85	0.78	0.92	<.001	1.02	0.96	1.08	.54
Income								
<$25K	0.90	0.73	1.12	.35	1.01	0.87	1.18	.89
Between $25K and $40K	0.90	0.82	0.99	.04	1.00	0.93	1.08	.98
Between $40K and $65K	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
>$65K	1.01	0.91	1.12	.82	1.01	0.95	1.09	.69
Education								
<50%	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Over 50%	1.20	1.08	1.35	.001	1.12	1.03	1.2	.008
Rurality								
Metropolitan	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Micropolitan	1.23	1.04	1.45	.01	0.95	0.84	1.08	.45
Small rural town	1.28	1.06	1.59	.01	0.95	0.83	1.09	.48
Isolated rural	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref

continued

Table 2. *Continued*

	Visit 1				*Visits 2–5*			
	OR	*95% CI*		*p-Value*	*OR*	*95% CI*		*p-Value*
Prior psychotherapy								
None	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
One or more prior episodes	1.37	1.18	1.59	<.001	1.03	0.92	1.14	.63
Resource utilization bands								
Nonusers	0.74	0.61	0.91	.004	0.88	0.77	1.02	.083
Healthy users	1.03	0.84	1.27	.75	0.91	0.8	1.03	.14
Low morbidity	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Moderate	0.90	0.79	1.01	.08	0.95	0.87	1.03	.19
High	0.79	0.68	0.91	.001	0.91	0.83	1.01	.08
Very high	0.67	0.55	0.80	<.001	0.83	0.73	0.96	.01
Prior anxiety diagnosis								
No anxiety diagnosis	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Prior anxiety diagnosis	1.04	0.93	1.18	.49	1.06	0.97	1.15	.10
Prior substance abuse								
No substance abuse	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Prior substance abuse	0.69	0.62	0.77	<.001	0.82	0.75	0.89	<.001
Prior antidepressant use								
No antidepressant use	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Prior antidepressant use	0.79	0.73	0.86	<.001	1.10	1.04	1.18	.001
Referral source								
Self	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
CD/MH provider	0.90	0.75	1.08	.249	1.10	0.95	1.27	.19
Family	0.79	0.67	0.93	.004	0.84	0.75	0.94	.004
Medical physician	0.92	0.84	1.00	.063	0.92	0.86	0.98	.007
Other	0.82	0.62	1.09	.173	0.92	0.76	1.12	.43

continued

Table 2. *Continued*

	Visit 1				*Visits 2–5*			
	OR	*95% CI*		*p-Value*	*OR*	*95% CI*		*p-Value*
Year								
2004	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
2005	1.03	0.92	1.16	.617	0.93	0.86	1.01	.07
2006	0.97	0.86	1.09	.599	0.92	0.85	1	.05
2007	0.93	0.82	1.04	.21	1.03	0.95	1.12	.42
2008	0.83	0.74	0.93	.002	1.06	0.98	1.16	.14
Appointment urgency								
At risk	1.00	Ref	Ref	Ref	1.00	Ref	Ref	Ref
Routine	0.76	0.64	0.89	.001	0.95	0.86	1.06	.38
Urgent	1.79	1.27	2.50	.001	1.27	1.08	1.52	.007
Cost sharing variables								
Reference group								
No deductible	1	Ref	Ref	Ref	1	Ref	Ref	Ref
Met deductible								
$100–$500	0.90	0.76	1.06	.20	0.90	0.80	1.01	.07
>$500	0.99	0.76	1.28	.95	0.85	0.71	1.03	.09
Unmet deductible								
$100–$500	0.75	0.64	0.88	<.001	0.93	0.83	1.04	.21
>$500	0.83	0.66	1.04	.10	0.88	0.75	1.04	.13
Reference group								
<$10	1	Ref	Ref	Ref	1	Ref	Ref	Ref
$10–$20	0.95	0.88	1.04	.26	0.95	0.89	1.00	.06
>$20	0.95	0.71	1.27	.71	1.08	0.86	1.32	.56

initiate or continue treatment relative to patients who self-referred while individuals with prior antidepressant use or with prior experience with substance abuse were more likely to make initial and subsequent psychotherapy visits. Individuals living in micropolitan and small rural towns were more likely to make a first visit than those from urban neighborhoods, but there was no effect of residential location for continuation of therapy.

We assessed the sensitivity of our model to the impact that having a choice of insurance product has on whether the presence of an unmet deductible affects the initiation and continuation of psychotherapy only among individuals that had a choice of insurance. Our results with respect to the impact of unmet deductibles also do not change when we adjust for these additional variables and interactions among covariates.

We also tested the sensitivity of our findings to alternative specifications of the model, specifically examining the impact of the season during which the call to the triage took place and interactions between season, the calendar year during which the episode took place, and the deductible level faced by the individual. Our results with respect to the impact of unmet deductibles do not change when we adjust for these additional variables and interactions among covariates.

DISCUSSION

To our knowledge, this is the first analysis of the impact of deductibles on the initiation and continuation of psychotherapy. We found a statistically significant effect of lower unmet deductibles (between $100 and $500) on the odds of patients making an initial visit relative to patients who did not have a deductible in their insurance benefits and a similar, although not statistically significant, effect of higher unmet deductibles on the initiation of psychotherapy. We found no effect for co-payments regardless of their size with respect to initiating or continuing psychotherapy.

Although we did not find an effect on initiation or continuation of psychotherapy among patients who had met their deductible regardless of size, having an unmet deductible of any size did appear to affect the initiation of therapy. As reported in Table 2, the effect size of having an unmet deductible under $500 on the likelihood of making an initial visit was similar for patients with smaller and larger deductibles (0.75 versus 0.83) relative to the reference group of having no deductible. The absence of a statistically significant coefficient for the impact of the larger unmet deductible is likely due to the much smaller

number of patients with larger deductibles. However, the similar effect size is critical to understanding the impact of deductibles on the use of psychotherapy, and our results suggest that an unmet deductible, regardless of size, reduces the likelihood that patients will initiate therapy.

Unmet deductibles of any size were associated with a lower likelihood of continuing psychotherapy among those individuals that made at least one visit, but these results were not statistically significant. This result is due in part to the smaller number of individuals included in the continuation analysis but potentially due in part to the reduced impact of cost sharing among individuals who have already made the decision to seek treatment for their depression. Traditional economic theory suggests willingness to pay decreases as more of any service is purchased, but other determinants of care seeking behavior may mitigate the effect of cost sharing on continuation of psychotherapy. Individuals who make an initial visit, and in particular individuals in the network who had to make appointments on their own may be less sensitive to price if they attached a high value to their initial encounter.

Several factors may explain our finding that co-payments have no statistically significant impact on initiation or continuation of therapy, a result that differs from findings of previous studies. Our study examined the experience of patients requesting an appointment or a referral for psychotherapy to treat depression, whereas previous research has examined a broader range of mental health needs and provider types. Co-payments, regardless of size, may not influence patients seeking care for depression who have contacted the mental health triage call center. Another factor to consider is the introduction of parity for mental health services that occurred during the study period. Individuals may have been less sensitive, or perhaps unaware, of newly imposed co-payments for mental health services when Washington mandated these provisions beginning in 2005.

The lack of a statistically significant effect of co-payments may also be due to the power of other explanatory factors included in the model. In particular, we note that patients receiving mental health care in the contracted network were significantly less likely to make an initial visit but significantly more likely to continue their care as reported by Simon and Ludman (2010). As noted above, patients calling the triage center that live in areas served by the group model could schedule an appointment during their call while patients in the contracted network were required to contact providers from a list provided to them. Further, provider incentives and differences in practice patterns may contribute to the greater likelihood of patients being treated by contract providers to make continuing visits. We also note that individuals

who self-referred were significantly more likely to initiate or continue therapy than patients reporting that they contacted (or were contacted by) the triage center at the request of a family member or physician (continuation only). These strong associations may attenuate the role that co-payments have on a patient's decision to seek and continue psychotherapy.

It may also be the case that consumers are more likely to be influenced by deductibles than co-payments as a mode of cost sharing. Co-payments are designed to impact patient behavior on the margin by increasing the price paid for any specific service at the point of care. The increased use of deductibles and consumer awareness of the total out-of-pocket expenses for which they might be liable, may have resulted in a shift toward consumers focusing on the total cost of their care rather than on the margin.

We note several important limitations of our study. Perhaps most critical is the potential for selection bias among the individuals whose experience is included in this study. Our analysis included all callers to the mental health triage center aged 13 and over and enrolled for 1 year before and 2 months following their call, but we do not include the experience of patients with mental health needs who did not call for a referral for psychotherapy. Therefore, using only electronic health plan data, we cannot know who may have chosen not to call for any reason and specifically because of concerns over their potential out-of-pocket costs. The potential impact of selection issues can be seen in the descriptive information reported in Table 1. Among patients with higher deductibles and co-payments a larger portion were self-referred, which may be due to the decreased price sensitivity among patients who are seeking mental health care. Patients who are self-motivated to seek care may be less concerned about their out-of-pocket costs if they perceive the need for treatment rather than being directed to care by their physician or a family member.

We also note the lack of individual-level data on key sociodemographic and socioeconomic data. Both income and education are important factors in determining the demand for mental health care, but due to the prohibitive cost of collecting primary data on income and education we used geo-coded information for these variables.

CONCLUSION

Americans now face more and more varied cost sharing arrangements in their insurance benefits and this development requires researchers to revisit the impact that out-of-pocket costs have on the decision to seek psychotherapy.

In particular, deductibles are likely to affect behavior in total and on the margin in different ways than co-payments and the body of literature that examined cost sharing in older insurance regimes must be updated. When we also consider the introduction of parity for mental health benefits with medical and surgical services and the federal reforms due to take place in 2014, the extant literature provides little evidence to guide policy makers about the joint effect of these shifts in access to mental health care. Our goal was to assess the role of co-payments and deductibles among patients in one managed care organization seeking psychotherapy for depression. Additional research should examine this question within other populations and other settings to document how patients are responding to the changing nature of insurance for mental health care.

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REFERENCES

American Psychiatric Association 2000. "Practice Guideline for the Treatment of Patients with Major Depressive Disorder (Revision)." *American Journal of Psychiatry* 157: s151–s145.

Barry, C. L., R. G. Frank, and T. G. McGuire. 2006. "The Costs of Mental Health Parity: Still an Impediment?" *Health Affairs (Millwood)* 25 (3): 623–34.

Chilvers, C., M. Dewey, K. Fielding , V. Gretton, P. Miller, B. Palmer, D. Weller, R. Churchill, I. Williams, N. Bedi, C. Duggan, A. Lee, and G. Harrison. 2001. "Antidepressant Drugs and Generic Counselling for Treatment of Major Depression in Primary Care: Randomised Trial with Patient Preference Arms." *British Medical Journal* 322 (7289): 772–5.

Claxton, G., B. DiJulio, H. Whitmore, J. D. Pickreign, M. McHugh, A. Osei-Anto, and B. Finder. 2010. "Health Benefits in 2010: Premiums Rise Modestly, Workers Pay More toward Coverage." *Health Affairs (Millwood)* 29 (10): 1942–50.

Dwight-Johnson, M., J. Unutzer, C. Sherbourne, L. Tang, and K. B. Wells. 2001. "Can Quality Improvement Programs for Depression in Primary Care Address Patient Preferences for Treatment?" *Medical Care* 39 (9): 934–44.

DxCG Inc. 2007. *DxCG RiskSmart Clinicial Classifications Guide.* Boston: DxCG Inc.

Fishman, P. A., and M. C. Hornbrook. 2009. "Assigning Resources to Health Care Use for Health Services Research: Options and Consequences." *Medical Care* 47 (7 suppl 1): S70–5.

Horgan, C. M., D. W. Garnick, E. L. Merrick, and D. Hodgkin. 2009. "Changes in How Health Plans Provide Behavioral Health Services." *Journal of Behavioral Health Services and Research* 36 (1): 11–24.

Mental Health Parity, Substitute House Bill 1154, Revised Code of Washington 41.06.600.

Parikh, S. V., Z. V. Segal, S. Grigoriadis et al. 2009. "Canadian Network for Mood and Anxiety Treatments (CANMAT) Clinical Guidelines for the Management of Major Depressive Disorder in Adults. II. Psychotherapy Alone or in Combination with Antidepressant Medication." *Journal of Affective Disorders* 117 (suppl 1): S15–25.

Patient Protection and Affordable Health Care for America Act. Public Law 111–148 124 Stat. 119 through 124 Stat. 1025 (2010).

Simon, G. E., and E. J. Ludman. 2010. "Predictors of Early Dropout from Psychotherapy for Depression in Community Practice." *Psychiatric Services* 61 (7): 684–9.

Simon, G. E., M. VonKorff, and M. L. Durham. 1994. "Predictors of Outpatient Mental Health Utilization by Primary Care Patients in a Health Maintenance Organization." *American Journal of Psychiatry* 151 (6): 908–13.

Simon, G. E., L. Grothaus, M. L. Durham, M. VonKorff, and C. Pabiniak. 1996. "Impact of Visit Co-payments on Outpatient Mental Health Utilization by Members of a Health Maintenance Organization." *American Journal of Psychiatry* 153 (3): 331–8.

U.S. Dept of Health and Human Services Agency for Health Policy and Research. 1993. Depression Guideline Panel. Clinical Practice Guideline Number 5. *Depression in Primary Care.* AHCPR Publication No 93-0550. Rockville, MD: U.S. Dept of Health and Human Services.

Wells, K. B., E. Keeler, and W. G. Manning Jr. 1990. "Patterns of Outpatient Mental Health Care over Time: Some Implications for Estimates of Demand and for Benefit Design." *Health Services Research* 24 (6): 773–89.

Wells, K. B., W. G. Manning Jr., N. Duan, J. P. Newhouse, J. E. Ware Jr., and B. Benjamin. 1984. "The Sensitivity of Mental Health Care Use and Cost Estimates to Methods Effects." *Medical Care* 22 (9): 783–8.

Wells, K. B., W. G. Manning Jr., N. Duan, J. P. Newhouse, and J. E. Ware Jr. 1986a. "Use of Outpatient Mental Health Services by a General Population with Health Insurance Coverage." *Hospital Community Psychiatry* 37 (11): 1119–25.

———. 1986b. "Sociodemographic Factors and the Use of Outpatient Mental Health Services." *Medical Care* 24 (1): 75–85.

———. 1987. "Cost-Sharing and the Use of General Medical Physicians for Outpatient Mental Health Care." *Health Services Research* 22 (1): 1–17.

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Appendix SA1: Author Matrix.

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